Prevention of esophageal cancer: the nutrition intervention trials in Linxian, China (Meeting abstract)

Author: Li B, Taylor PR, Li JY, Dawsey SM, et.al.

Journal: Anticarcinogenesis and Radiation Protection, 4th International Conference: Mechanisms, Biomarkers, Molecular Diagnostics and Preventive Strategies. April 18-23, 1993, Baltimore, Maryland, p. 65, 1993

Abstract: In Linxian China, the esophageal/gastric cardia cancer mortality rates are among the highest in the world. There is suspicion that the population's chronic deficiencies of multiple nutrients are etiologically involved. We conducted two randomized, placebo-controlled nutrition intervention trials to test the effect of multiple vitamin and mineral supplements in lowering the rates of cancer. In the first trial, the Dysplasia Trial, 3318 individuals with a cytologic diagnosis of esophageal dysplasia received daily supplementation with 26 vitamins and minerals in doses typically 2-3 times the US Recommended Daily Allowances, or placebos, for 6 years. During the trial, the cumulative esophageal/gastric cardia cancer mortality was 4.5%, while the cumulative esophageal/gastric cardia cancer incidence was 12.7%. The second trial, the General Population Trial, involved 29,584 individuals and used a one-half replicate of a 2(4) factorial experimental design. This design tested the effects of four combinations of nutrients: (A) retinol and zinc, (B) riboflavin and niacin, (C) vitamin C and molybdenum, and (D) beta-carotene, vitamin E, and selenium. Doses for the daily supplements ranged from 1 to 3 times the US Recommended Daily Allowances, and the different vitamin/mineral combinations or placebos were taken for a period of 5.25 years. During the intervention, cumulative esophageal/gastric cardia cancer mortality was 2.1% and cumulative esophageal/gastric cancer incidence was 3.6%. Design, methods, and preliminary results are presented for these two trials, the largest cancer chemoprevention trials reported to date.